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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/791,780

03/04/2004

Masahiro Horie

65326-033

4403

7590

11/15/2005

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EXAMINER

AKANBI, ISIAKA O

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/791,780

Applicant(s)

HORIE, MASAHIRO

Examiner

Isiaka O. Akanbi

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-19 is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04 March 2004
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statement file 04 March 2004 has been entered and reference considered by the examiner.

### *Drawings*

The examiner approves the drawings filed 04 March 2004.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, and 5-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Otsuki et al. (6,714,301 B2). The reference of Otsuki discloses the features of the claimed as follows:

As regard to claims 1 and 7, Otsuki discloses a spectroscopic ellipsometer (col. 2, line 28-33) comprising of the following:

a lighting part (1) for guiding polarized light to an object (8); and  
a light receiving part (9) for receiving reflected light which is said polarized light (10) reflected on said object to acquire a polarization state at each wavelength of said reflected light (fig. 1),

wherein said lighting part comprises;

a light source (2) part (fig. 1); and

a polarizer (5) which is a polarizing element for acquiring said polarized light from light outputted from said light source (2) part (fig. 1), and

at least one reflection mirror (4) is disposed only between said light source (2) part and said polarizer (5) on an optical path from said light source part to said object (fig. 1)(col. 3, line 36-41)

As to claim 2, according to claim 1, Otsuki discloses wherein said light receiving part comprises:

an analyzer (13) which is a polarizing element on which said reflected light is incident (fig. 1); and

a spectroscope (11)(col. 4, line 22) on which said reflected light through said analyzer (13) is incident,

said lighting part or said light receiving part comprises a rotation mechanism for rotating said polarizer (col. 4, line 26-31) and

at least one reflection mirror is disposed only between said analyzer and said spectroscope on an optical path from said object to said spectroscope (fig. 1)(col. 4, line 16-19)

As to claims 3 and 9, Otsuki discloses polarizer (5) that is a sheet-like polarizing element (fig. 1).

As to claim 5, Otsuki discloses wherein a plurality of reflection mirrors are arranged between said light source part and said polarizer (fig. 1)(col. 3, line 36-41).

As to claim 6, Otsuki discloses plurality of reflection mirrors (fig. 1)(col. 3, line 36-41) that form rotationally-symmetric ellipsoidal mirrors.

Regarding claim 8, Otsuki discloses a spectroscopic ellipsometer comprising:

a lighting part (1) for guiding polarized light to an object (8); and

a light receiving part (9) for receiving reflected light which is said polarized light reflected on said object to acquire a polarization state at each wavelength of said reflected light (fig. 1),

wherein said lighting part comprises-

a light source (2) part (fig. 1);

a polarizer (5) which is a polarizing element for acquiring said polarized light from light outputted from said light source part (fig. 1); and

a plurality of rotationally-symmetric ellipsoidal mirrors disposed on an optical path from said light source part to said object through said polarizer (fig. 1)(col. 3, line 36-41).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki et al. (6,714,301 B2) in view of Rotter et al. (6,784,991 B2)

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over of Otsuki as applied to claims 3 and 9. The reference of Otsuki teaches of the features of claims 3 and 9, comprising the transmission-type spherical prism (5) that serves as the polarizer (fig. 1)(col. 3, line 65-67), however the reference of Otsuki is silent regarding polarizer having a plurality of metal wires are arranged on a transparent plate at constant intervals (a wire grid polarizer or a grating polarizer). The reference of Rotter teaches of SE polarization system that includes wire grid polarizer (col. 3, line 38-45). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to wire grid polarizer in the focused beam of the SE for the purpose of allowing one linear polarization state to be transmitted while the orthogonal polarization state can be either reflected or absorbed.

### **Allowable Subject Matter**

Claims 11-19 are allowed over the prior art of record.

As to claim 11, the prior art of record, taken alone or in combination, fails to disclose or render obvious a spectroscopic ellipsometer comprising light source part for emitting auxiliary light, an optical element for superimposing said auxiliary light from said light source part and a light shielding pattern disposed at a position almost optically conjugate to an aperture stop position of an optical system from said light source part to said object on an optical path from said another light source part to said polarizer. Additionally, the prior art of record, taken alone or in combination, fails to disclose or render obvious an image pickup part disposed at a position optically conjugate to said light shielding pattern, for receiving said auxiliary light from said another optical element to acquire an image of said light shielding pattern and said lighting part or said light receiving part comprises a rotation mechanism for rotating said polarizer or said analyzer..

Claims 12-19 are allowed over cited prior art because their limitations are dependent on the limitations of independent claim 11, or any intermediate claim.

### **Additional Prior Art**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record is Rangarajan et al. (6,704,101 B1).

Rangarajan discloses that a control system can be programmed and/or configured to implement an interdependent control of the positioning system and the measurement system such that beam emission and reflection are synchronized with the rotation of the substrate, as provided by the positioning system.

### **Conclusion**

### Fax/Telephone Information

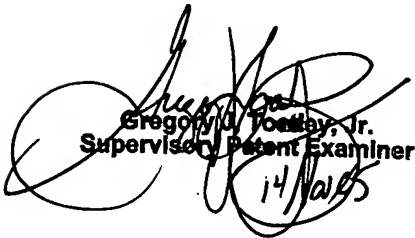
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi

November 9, 2005

  
Gregory J. Toatley, Jr.  
Supervisor, Patent Examiner  
14/11/05